



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/494,877	01/31/2000	Zhigang Fang	34098/GTL/S61	4072
24574	7590	12/29/2004	EXAMINER	
JEFFER, MANGELS, BUTLER & MARMARO, LLP 1900 AVENUE OF THE STARS, 7TH FLOOR LOS ANGELES, CA 90067			JENKINS, DANIEL J	
		ART UNIT		PAPER NUMBER
				1742

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/494,877	FANG ET AL.	
	Examiner	Art Unit	
	Daniel J. Jenkins	1742	

-- The MAILING DATE of this communication appars on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 October 2004.
- 2a) This action is FINAL.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-5, 7, 10-21, 25-29, 32-34, 37 and 40-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-5, 7, 10-21, 25-29, 32-34, 37, 40 and 42 is/are allowed.
- 6) Claim(s) 41 and 43-45 is/are rejected.
- 7) Claim(s) 46 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

1. The Examiner has carefully considered Applicant's Response of 10/14/04. The Examiner does not find Applicant's argument directed to the ordered microstructure persuasive. In particular, the Examiner finds this subjective term to be found in the prior art, said term relating to terms including grain density which is found in the prior art. The Examiner makes a new rejection directed to claim 41, thus this action is accordingly not made final.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fang et al. '382.

Fang et al. '382 disclose the invention substantially as claimed. Fang et al. '382 disclose a cermet material comprising :

a WC hard phase; and

a binder phase of Fe-Ni-Co alloys (col. 7, line 8-13).

Fang et al. '382 disclose that the binder phase have a low coefficient of thermal expansion (CTE) of less than 8um/m-K.

Fang et al. further disclose a WC particle size of 1-15um (col. 9, lines 24-27).

Thus, Fang et al. '382 discloses that the CTE is a effective variable within the invention that is modified based on the desired toughness of the material.

Fang et al. '382 further disclose wherein the hard phase can comprise other carbides with the WC including TiC (col. 8, line 21-29) and can further include carbides, borides, nitrides, carbonitrides, carboborides, and mixtures thereof, such as those based on Ti (col. 8, lines 21-27).

Fang et al. '382 further disclose that the material be used in forming a cutting element. The determination of the ratio of the binder phase materials would be determined by one of ordinary skill through routine experimentation based on the specific selection of hard phase material and the desired toughness of the final material.

The binder material being in alloy form including dispersed grain structure of the disclosed density inherently meets the limitation of an ordered structure.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 41 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "less than that of conventional WC-Co" is found to be indefinite. The degree of difference is not clear to one of ordinary skill in the art, nor is the term defined by the Specification.

6. Claim 46 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art not disclosing or rendering obvious the binder material being iron based.

7. Claims 1-5, 7, 10-21, 25-27, 29, 32-34, 37, 40, and 42 are allowable.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

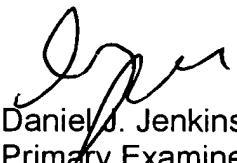
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Jenkins whose telephone number is 571-272-1242. The examiner can normally be reached on M-TH6:30AM-5:00PM.

Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1242. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel J. Jenkins  
Primary Examiner  
Art Unit 1742

dj